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ABSTRACT

This study involves a correlation between two measures of creativity: the Torrance Tests of Creative Thinking (TTCT) and the divergent production subtests of the Structure of Intellect Learning Abilities Test (SOI-LA). A population of 263 junior high school and senior high students from Louisiana were tested with both the TTCT and the SOI-LA. Results from the study indicate that the SOI-LA is an adequate measure to be used in place of the TTCT when identifying students for figural creativity. The convergent and discriminant validities of the SOI-LA were supported. (Contains 1 table and 13 references.) (Author/SLD)

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PERFORMANCE ON THE TORRANCE TEST OF CREATIVE THINKING AND THE STRUCTURE OF INTELLECT--LEARNING ABILITIES TEST: IS THERE A RELATIONSHIP?

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Abstract

This study involves a correlation between two measures of creativity: the Torrance Test of Creative Thinking (TTCT) and the divergent production subtests of the Structure of Intellect Learning Abilities Test (SOI-LA). A population of 263 junior high and senior high students from Louisiana were tested with both the TTCT and the SOI-LA. Results of the study indicate that the SOI-LA is an adequate measure to be used in place of the TTCT when identifying students for figural creativity.

Performance on the Torrance Test of Creative Thinking and the Structure of Intellect-Learning Abilities Test: Is There a Relationship?

Background and Objectives

Creativity is one of the characteristics measured for placement of students in gifted and talented programs. Measures such as Wechsler Intelligence Scale for Children--Revised, the Stanford-Binet or Otis-Lennon, which are frequently used for these purposes do not provide an index of creative potential. A combination of creative indices would ensure that children's creative abilities and potentials are noted and used in placement (Ford & Harris, 1992). Assessment of creativity is often accomplished with the Torrance Test of Creative Thinking (TTCT).

As Davis (1983) points out, "probably 95 percent of researchers and educators who use divergent thinking tests use the Torrance Test of Creative Thinking" (p. 87). Frasier (1988) states that the TTCT is designed to measure "general mental abilities commonly presumed to be brought into play in creative achievements" (p. 7). Cooper (1991) in her critique of TTCT states that TTCT has proved itself in assessing mental abilities related to creativity. The test has demonstrated its reliability and validity in the context of research and group assessment.

The Structure of Intellect--Learning Abilities Test (SOI-LA) "is a series of test forms designed to assess a wide variety of cognitive abilities or factors of intelligence in children and adults" (Meeker, Meeker, & Roid, 1985, p. 1). It recognizes that divergent thinking is

an integral part of intellectual activity frequently displayed by those who are identified as gifted and creative.

The SOI-LA is based on J. P. Guilford's Structure of Intellect model. This model comprises 120 abilities charted on a three dimensional cube. The dimensions include operations (cognition, memory, evaluation, convergent production, divergent production), content (figural, symbolic, semantic, behavioral) and products (units, classes, relations, systems, transformations, and implications). Both Guilford and Meeker believed that intelligence could be segmented, tested, and remediated through the use of SOI materials (Meeker, 1990).

Roid (1985) lists strengths of the SOI-LA such as the measurement of factors relevant to school learning that may not be assessed by other instruments, the inclusion of the divergent production subtests, the use of figural and nonverbal responses which allow culturally different students to show strengths, and the attention given to visual skills that may indicate perceptual disabilities. Cunningham, Thompson, Ashton, and Wakefield (1978) compare the SOI-LA with teacher prediction of giftedness and creativity. They suggest that SOI-LA is "useful for predicting certain teacher perceptions"...and "to the extent that the teacher's perceptions of identification effectiveness are assumed valid, ...Meeker's test provides useful identification information" (p. 151).

Newman (1989) suggests that the primary use of SOI-LA is to assess what kind of intelligence the student has. "The test is appropriate for planning curriculum and instruction for remedial, general, and gifted students. Documentation in the manual provides

evidence of the use of the test with gifted... students" (p. 791). The SOI-LA provides information similar to that of Stanford-Binet plus information on divergent production abilities that include creative responses.

Classroom teachers and assessment personnel need simple. efficient, and inexpensive ways to screen students for gifted and talented programs. Torrance (1984) recommended using a creativity test "that considers a variety of indicators rather than a single one" (p. 156). Currently the Torrance Test of Creative Thinking is most frequently used to assess creativity (divergent thinking/production). The SOI-LA has three subtests that are designed to measure divergent thinking. These subtests could offer an alternate assessment tool for identifying creative potential. Thus the purpose of this study was to determine if there is a relationship between the fluency and originality scores of TTCT and the fluency and originality scores of the creativity (divergent production) subtests of SOI-LA. A significant positive relationship among the scores would indicate that the SOI-LA provides an alternative mode of assessment to the TTCT.

Data Source and Methods

Data were collected from 263 junior high school students who were participating in a summer residential program for creative, gifted, and talented youth. This program is based on the Torrance Creative Scholars Program, established in 1988, as a "search-and-support system for individuals with creative potential" (Torrance, 1989, p. 141). All students were administered the TTCT in their schools prior to their participation in the program. A school teacher or counselor administered the TTCT in accordance with test manual guidelines. The

SOI-LA was administered to the students as part of their residential program by graduate assistants who had been trained by a certified SOI Institute trainer.

Torrance and Ball (1984) provide evidence in support of the inter-rater reliability and construct validity of TTCT. Swartz (1988) further confirms that the inter and intra scorer reliability is generally above .90. Extensive evidence related to the psychometric properties of SOI-LA is available (see Meeker, Meeker & Roid, 1985 for an extended discussion).

Although students' performances on both TTCT and SOI-LA were scored on all the dimensions included in the tests, for the purpose of this study, the scores on fluency and originality of TTCT were correlated with fluency and originality scores on the three divergent production subtests of SOI-LA. The three divergent production subtests are: Divergent production of Figural Units (DFU), Divergent production of Symbolic Relations (DSR), and Divergent production of seMantic Units (DMU).

Pearson's product-moment correlation was used to determine the nature of the relationship. Relationships were considered significant at $p < .05$.

Results

The DFU fluency correlated with the TTCT fluency at .33 ($p < .01$); the DMU and DSR fluency and the TTCT fluency had nonsignificant correlations. The DFU originality correlated with TTCT at .29 ($p < .01$); the DMU originality correlated with the TTCT originality at .26 ($p < .01$). The DSR originality scores were not correlated with the TTCT originality scores.

Insert Table 1 about here

Conclusions and Educational Importance

A significant correlation exists between the DFU subtest and the TTCT in both fluency and originality. Since TTCT is a figural creativity test, this correlation is expected. The DMU subtest measures semantic production which is not measured by TTCT, so the lack of correlation on fluency is expected. The significant correlation between DMU originality and TTCT originality would support theories upon which these measures are based in that students are given credit for original responses whether semantic (SOI-LA) or figural (TTCT). The lack of correlation of DSR subtest scores and TTCT provides evidence that the two abilities measured are distinct. The DSR subtest is a series of magic squares; the TTCT involves picture completion.

The results of this study provide convergent and discriminant validation for the creativity subtests of SOI-LA. These tests may therefore be used as an alternative to TTCT in the measurement of creativity. Further studies with more representative groups are needed to strengthen the findings of this study..

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Table 1

Correlation Among SOI and TTCT Subtests

	TTCT	
SOI Subtests	Fluency	Originality
Divergent production of Figural Units-Fluency	.33**	
Divergent production of Figural Units-Originality		.29**
Divergent production of seMantic Units-Fluency	.03	
Divergent production of seMantic Units-Originality		.26**
Divergent production of Symbolic Relations-Fluency	.07	
Divergent production of Symbolic Relations-Originality		-.13

**$p < .01$